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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,878	09/12/2003	Karnail S. Atwal	HA726 DIV	6964

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EXAMINER

RAO, DEEPAK R

ART UNIT PAPER NUMBER

1624

DATE MAILED: 05/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/660,878	Applicant(s) ATWAL ET AL.	
	Examiner Deepak Rao	Art Unit 1624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 61-68, 78, 80-85 and 91-96 are pending in the application.
- 4a) Of the above claim(s) 64, 65 and 80 are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 61-63, 66-68, 78, 81-85, 91-96 are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This office action is in response to the amendment filed on February 27, 2006.

Claims 61-68, 78, 80-85 and 91-96 are pending in this application.

Election/Restrictions

The search and examination of this application is conducted based on the elected species of compound 345, following the guidelines of MPEP § 803.02, to the extent on the subgenus of compounds of formula (I*) wherein R^{3*} is -C(O)NZ^{5*}Z^{6*} and other variables are as defined for the elected species. Claims 64, 65 and 80 are withdrawn from further consideration by the examiner pursuant to 37 CFR 1.142(b), as being drawn to a non-elected species. The non-elected species and the generic subject matter drawn to the non elected species from claims 61-63, 66-79 and 81-83 are also withdrawn from further consideration.

The following rejections are maintained:

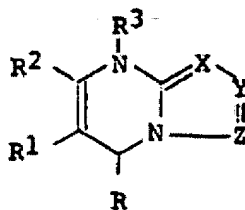
Claims 61-63, 66-68, 78, 81-85 and new claims 91-96 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuda et al., EP 217,142, in view of applicant's submission. The reasons provided in the previous office action are incorporated hereby reference.

Applicant's arguments have been fully considered but they were not deemed to be persuasive. Applicant argues that 'the USPTO has the initial burden of demonstrating why one skilled in the art would have been motivated to make the proposed modifications needed to arrive at the claimed compounds'. However, it was clearly provided in the

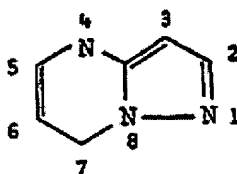
Art Unit: 1624

previous office action that the reference teaches a generic group of compounds and further discloses specific compounds that are structurally analogous to the instantly claimed compounds. The reference teaches that the compounds are useful as pharmaceutical therapeutic agents in the treatment of conditions such as arrhythmia, cerebral diseases, etc. and therefore, one of ordinary skill in the art would have been motivated to modify the reference teachings to prepare the structurally analogous compounds with the reasonable expectation that the structurally analogous compounds would have similar properties and therefore the same use.

The reference teaches a genus of structural formula (I) (depicted below for convenience):

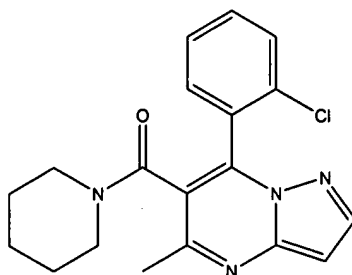


and further indicates that core ring is represented by the structural formula:



and recites that R¹ represents various substituents (as listed in page 5) including carbamoyl and further provides that the term carbamoyl includes groups such as pyrrolidinylcarbamoyl, piperidinocarbamoyl, morpholinocarbamoyl, etc. The reference further discloses the following specific compound (page 46, compound no. 156):

Art Unit: 1624



The instant claims exclude the reference disclosed compound, see the proviso statement in the claims – “provided that Z^{5*} and Z^{6*} do not together form unsubstituted piperidinyl, unsubstituted pyrrolidinyl or unsubstituted morpholinyl”. The claims, however, include compounds wherein the piperinyl, pyrrolidinyl or morpholinyl groups are substituted by a substituent, e.g., by an alkyl group such as a methyl (CH₃) group. While the reference does not disclose a compound having a substituted piperidinyl group in reference formula (I), such compounds are suggested by the reference to one skilled in the art.

“An obviousness rejection based on similarity in chemical structure and function entails the motivation of one skilled in the art to make a claimed compound, in the expectation that compounds similar in structure will have similar properties.” *In re Payne*, 606 F.2d 303, 313, 203 USPQ 245, 254 (CCPA 1979). Reference must be considered under 35 U.S.C. 103, not only for what it expressly teaches but also for what it fairly suggests, in determining obviousness. *In re Burckel*, 201 USPQ 67 (CCPA 1979). The necessary motivation to make the structurally analogous compounds of the reference disclosed compound rises from the expectation that compounds, similar in structure will have similar properties and therefore, the same use, i.e., as pharmaceutical agents.

It is to be noted that rejection under 35 U.S.C. 103 is proper where the subject matter claimed “is not *identically* disclosed or described” in the prior art, and the prior art

Art Unit: 1624

directs those skilled in the art to the compounds, without any need for picking, choosing, and combining various disclosures. See *In re Shaumann et al.*, 572 F.2d 312, 315, 316, 197 USPQ 5, 8, (CCPA 1978). Further, the reference teaches that the compounds are useful as pharmaceutical agents, which is sufficient to one of ordinary skill to make the claimed compounds because similar properties are normally presumed when compounds are very close in structure. Where the specific compound falls within the ambit of a “very limited number of compounds”, the fact that a specific embodiment is taught to be preferred is not controlling, since all disclosures of the prior art, including unpreferred embodiments, must be considered.” *In re Lamberti*, 545 F.2d 747,750, 192 USPQ 278, 280 (CCPA 1976). “The question under 35 U.S.C. 103 is not merely what the reference expressly teaches but what it would have suggested to one of ordinary skill in the art at the time the invention was made.”

“Structural relationships provide the requisite motivation or suggestion to modify known compounds to obtain new compounds.” See *In re Duel*, 51 F.3d at 1558, 34 USPQ2d at 1214. The closer the physical and chemical similarities between the claimed species or subgenus and any exemplary species or subgenus disclosed in the prior art, the greater the expectation that the claimed subject matter will function in an equivalent manner to the genus. See *In re Dillon*, 919 F.2d at 696, 16 USPQ2d at 1904.

Applicant cites *In re Jones* to overcome the obviousness rejection. However, *Jones* dealt with the obviousness of a particular claimed ammonium salt based on a generic teaching of “substituted ammonium salts” with no Markush recitation for particular moiety, aminoethoxy ethanol, the salt on appeal. Secondary references applied in *Jones* were deemed not properly combinable with the generic disclosure in the primary

Art Unit: 1624

reference since the references were not all from the same art area. Unlike the situation in *Jones*, the instantly claimed compounds are obvious structural variants of compounds expressly taught by the reference. As explained above, the reference generically discloses all the elements of the instantly claimed genus and further, provides an example that has been excluded from the instant claims. The instantly claimed genus and the species thereof differ from the reference compound only by a single substituent such as a methyl group, and it has been well established that compounds that differ by a $-CH_2$ group are structural homologs. Thus, the reference provides sufficient motivation for the ordinary artisan to modify the reference compounds to arrive at the instantly claimed compounds because one of ordinary skill in the art only needs to change the position of the substituent to arrive at the instant invention. Such modification would have been obvious, absent a showing of unexpected results.

Applicant's citation of *In re Lalu* and *In re Grabiak* is also acknowledged. The fact situation in the above cases, however, these cases are not on point with respect to the instant application. *Lalu* case dealt with rejection of a product as being obvious over reference disclosed intermediate compound and the court stated that "No common-properties presumption rises from the mere occurrence of a claimed compound at an intermediate point in a conventional reaction yielding a specifically named prior art compound". The fact scenario in *Grabiak* was esters vs. thioesters which is far removed from the instant situation.

Applicant further argues that 'the reference fails to teach, disclose or suggest compounds that demonstrate activity other than Ca^{2+} activity and in contrast, the instant compounds exhibit Kv1 activity which allows for treatment of specific types of

Art Unit: 1624

arrhythmias, for example atrial arrhythmias'. This is not persuasive because the reference teaches a use for the compounds, which is sufficient to one of ordinary skill to make the claimed compounds because similar properties are normally presumed when compounds are very close in structure. There is nothing on the record to show that the reference compounds do not possess the activity of the instant compounds. Applicants must prove that their compounds possess a property that the prior art compounds do not possess. If the prior art compound does in fact possess a particular benefit, even though the benefit is not recognized in the prior art, applicant's recognition of the benefit is not in itself sufficient to distinguish the claimed compounds from the prior art. The discovery of additional use not disclosed in the reference does not make otherwise obvious compounds unobvious. See *In re Best*, 195 USPQ 430 (CCPA 1977).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Art Unit: 1624

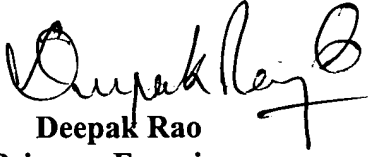
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Deepak Rao whose telephone number is (571) 272-0672.

The examiner can normally be reached on Tuesday-Friday from 6:30am to 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James O. Wilson, can be reached at (571) 272-0661. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-1600.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Deepak Rao
Primary Examiner
Art Unit 1624

May 14, 2006